Please cancel claims 4, 5, 45 and 46 without prejudice or disclaimer to the subject matter contained therein.

Please amend claims 1, 6, 8, 33-39, 42, 47, 49 and 56 as follows :

1. (Once amended) A method for producing aromatic carbonates which comprises the steps of:

(i) contacting at a temperature sufficient to keep the mixture molten at least one aromatic hydroxy compound with a catalyst composition comprising the following and any reaction products thereof:

(A) at least one Group 8, 9, or 10 metal or a compound thereof;

(B) at least one tetrafluoroborate, hexafluorophosphate, tetraarylborate, arylsulfonate, sulfate, nitrate, carboxylate, acetate, benzoate, halide, chloride, or bromide salt with cation selected from the group consisting of guanidinium, ammonium, phosphonium, sulfonium, and alkali metal;

(C) at least one metal co-catalyst; and

(D) optionally, at least one activating solvent;

(ii) optionally heating the mixture at atmospheric pressure to a temperature above that sufficient to keep the mixture molten;

(iii) pressurizing the mixture with carbon monoxide;

(iv) optionally heating the mixture under pressure of carbon monoxide to a temperature above that sufficient to keep the mixture molten;

(v) optionally maintaining the mixture under pressure of carbon monoxide for a time period;

(vi) introducing oxygen to the mixture to a desired concentration of oxygen in carbon monoxide with the proviso that the solvent for the reaction mixture before introduction of oxygen consists of the aromatic hydroxy compound;

(vii) starting gas flow to the mixture at a desired concentration of oxygen and carbon monoxide;

(viii) optionally maintaining gas flow for a time period at less than a desired ultimate temperature for the mixture; and

(ix) optionally heating the mixture to a desired ultimate temperature under flow of

gases.

6. (Once amended) The method of claim 1 wherein the salt is at least one quaternary ammonium salt.

8. (Once amended) The method of claim 1 wherein the salt is at least one alkali metal salt and the mixture contains at least one activating solvent selected from the group consisting of polyethers, nitriles, carboxylic acid amides, and sulfones.

33. (Once amended) A method for producing diphenyl carbonate which comprises the steps of :

(i) contacting phenol at a temperature sufficient to keep the mixture molten with a catalyst composition comprising the following and any reaction products thereof:

(A) at least one palladium source;

(B) at least one tetrafluoroborate, hexafluorophosphate, tetraarylborate, arylsulfonate, sulfate, nitrate, carboxylate, acetate, benzoate, halide, chloride, or bromide salt with cation selected from the group consisting of guanidinium, ammonium, phosphonium, sulfonium, and alkali metal;

(C) at least one metal co-catalyst with metal selected from the group consisting of lead, cobalt, copper, titanium, manganese, cerium, and mixtures thereof; and

(D) optionally, at least one activating solvent;

(ii) heating the mixture at atmospheric pressure to a temperature in a range between about 72°C and about 90°C;

(iii) pressurizing the mixture with carbon monoxide;

(v) maintaining the mixture under pressure of carbon monoxide for a time period;

(vi) introducing oxygen to the mixture at a concentration of greater than about 8 molar % based on carbon monoxide with the proviso that the solvent for the reaction mixture before introduction of oxygen consists of the aromatic hydroxy compound;

(vii) starting gas flow to the mixture at a desired concentration of oxygen and carbon monoxide;

(viii) maintaining gas flow for a time period at less than a desired ultimate temperature for the mixture; and

(ix) heating the mixture to a desired ultimate temperature under flow of gases.

34. (Once amended) A method for producing diphenyl carbonate which comprises the steps of :

(i) contacting phenol at a temperature sufficient to keep the mixture molten with a catalyst composition comprising the following and any reaction products thereof:

(A) at least one palladium source;

(B) at least one tetrafluoroborate, hexafluorophosphate, tetraarylborate, arylsulfonate, sulfate, nitrate, carboxylate, acetate, benzoate, halide, chloride, or bromide salt with cation selected from the group consisting of guanidinium, ammonium, phosphonium, sulfonium, and alkali metal;

(C) at least one metal co-catalyst with metal selected from the group consisting of lead, cobalt, copper, titanium, manganese, cerium, and mixtures thereof; and

(D) optionally, at least one activating solvent;

(iii) pressurizing the mixture with carbon monoxide;

(iv) heating the mixture under pressure of carbon monoxide to a desired ultimate temperature;

(v) maintaining the mixture under pressure of carbon monoxide for a time period;

(vi) introducing oxygen to the mixture at a concentration of greater than about 8 molar % based on carbon monoxide with the proviso that the solvent for the reaction mixture before introduction of oxygen consists of the aromatic hydroxy compound; and

(vii) starting gas flow to the mixture at a desired concentration of oxygen and carbon monoxide.

35. (Once amended) A method for producing diphenyl carbonate which comprises the steps of :

(i) contacting phenol at a temperature sufficient to keep the mixture molten with a catalyst composition comprising the following and any reaction products thereof:

(A) at least one palladium source;

(B) at least one tetrafluoroborate, hexafluorophosphate, tetraarylborate, arylsulfonate, sulfate, nitrate, carboxylate, acetate, benzoate, halide, chloride, or bromide

salt with cation selected from the group consisting of guanidinium, ammonium, phosphonium, sulfonium, and alkali metal;

(C) at least one metal co-catalyst with metal selected from the group consisting of lead, cobalt, copper, titanium, manganese, cerium, and mixtures thereof; and

(D) optionally, at least one activating solvent;

(ii) heating the mixture at atmospheric pressure to a temperature no higher than about 72°C;

(iii) pressurizing the mixture with carbon monoxide;

(vi) introducing oxygen to the mixture to a desired concentration of oxygen in carbon monoxide with the proviso that the solvent for the reaction mixture before introduction of oxygen consists of the aromatic hydroxy compound;

(vii) starting gas flow to the mixture at a desired concentration of oxygen and carbon monoxide; and

(ix) heating the mixture to a desired ultimate temperature under flow of gases.

36. (Once amended) A method for producing diphenyl carbonate which comprises the steps of :

(i) contacting phenol at a temperature sufficient to keep the mixture molten with a catalyst composition comprising the following and any reaction products thereof:

(A) at least one palladium source;

(B) at least one tetrafluoroborate, hexafluorophosphate, tetraarylborate, arylsulfonate, sulfate, nitrate, carboxylate, acetate, benzoate, halide, chloride, or bromide salt with cation selected from the group consisting of guanidinium, ammonium, phosphonium, sulfonium, and alkali metal;

(C) at least one metal co-catalyst with metal selected from the group consisting of lead, cobalt, copper, titanium, manganese, cerium, and mixtures thereof; and

(D) optionally, at least one activating solvent;

(ii) heating the mixture at atmospheric pressure to a temperature no higher than about 72°C;

(iii) pressurizing the mixture with carbon monoxide;

(v) maintaining the mixture under pressure of carbon monoxide for a time period;

(vi) introducing oxygen to the mixture at a concentration of greater than about 8 molar % based on carbon monoxide with the proviso that the solvent for the reaction mixture before introduction of oxygen consists of the aromatic hydroxy compound;

(vii) starting gas flow to the mixture at a desired concentration of oxygen and carbon monoxide; and

(ix) heating the mixture to a desired ultimate temperature under flow of gases.

37. (Once amended) A method for producing diphenyl carbonate which comprises the steps of :

(i) contacting phenol at a temperature sufficient to keep the mixture molten with a catalyst composition comprising the following and any reaction products thereof:

(A) at least one palladium source;

(B) at least one tetrafluoroborate, hexafluorophosphate, tetraarylborate, arylsulfonate, sulfate, nitrate, carboxylate, acetate, benzoate, halide, chloride, or bromide salt with cation selected from the group consisting of guanidinium, ammonium, phosphonium, sulfonium, and alkali metal;

(C) at least one metal co-catalyst with metal selected from the group consisting of lead, cobalt, copper, titanium, manganese, cerium, and mixtures thereof; and

(D) optionally, at least one activating solvent;

(iii) pressurizing the mixture with carbon monoxide;

(iv) heating the mixture under pressure of carbon monoxide to temperature above that sufficient to keep the mixture molten and below a desired ultimate reaction temperature;

(v) maintaining the mixture under pressure of carbon monoxide for a time period;

(vi) introducing oxygen to the mixture at a concentration of greater than about 8 molar % based on carbon monoxide with the proviso that the solvent for the reaction mixture before introduction of oxygen consists of the aromatic hydroxy compound;

(vii) starting gas flow to the mixture at a desired concentration of oxygen and carbon monoxide; and

(ix) heating the mixture to a desired ultimate temperature under flow of gases.

38. (Once amended) A method for producing diphenyl carbonate which

comprises the steps of :

(i) contacting phenol at a temperature sufficient to keep the mixture molten with a catalyst composition comprising the following and any reaction products thereof:

(A) at least one palladium source;

(B) at least one tetrafluoroborate, hexafluorophosphate, tetraarylborate, arylsulfonate, sulfate, nitrate, carboxylate, acetate, benzoate, halide, chloride, or bromide salt with cation selected from the group consisting of guanidinium, ammonium, phosphonium, sulfonium, and alkali metal;

(C) at least one metal co-catalyst with metal selected from the group consisting of lead, cobalt, copper, titanium, manganese, cerium, and mixtures thereof; and

(D) optionally, at least one activating solvent;

(iii) pressurizing the mixture with carbon monoxide;

(vi) introducing oxygen to the mixture at a concentration of greater than about 8 molar % based on carbon monoxide with the proviso that the solvent for the reaction mixture before introduction of oxygen consists of the aromatic hydroxy compound;

(vii) starting gas flow to the mixture at a desired concentration of oxygen and carbon monoxide; and

(ix) heating the mixture to a desired ultimate temperature under flow of gases.

39. (Once amended) A method for producing aromatic carbonates which comprises the steps of :

(i) contacting at a temperature sufficient to keep the mixture molten at least one aromatic hydroxy compound with a catalyst composition comprising the following and any reaction products thereof:

(A) at least one Group 8, 9, or 10 metal or a compound thereof;

(B) at least one tetrafluoroborate, hexafluorophosphate, tetraarylborate, arylsulfonate, sulfate, nitrate, carboxylate, acetate, benzoate, halide, chloride, or bromide salt with cation selected from the group consisting of guanidinium, ammonium, phosphonium, sulfonium, and alkali metal;

(C) at least one metal co-catalyst; and

(D) optionally, at least one activating solvent;

wherein the mixture is exposed to an atmosphere comprising at least about 8 molar % oxygen before the mixture is heated to a temperature above about 90°C, with the proviso that the solvent for the reaction mixture before introduction of oxygen consists of the aromatic hydroxy compound.

42. (Once amended) A method for producing aromatic carbonate from a mixture comprising an aromatic hydroxy compound, which comprises the steps of :

(x) maintaining the mixture at a temperature at least sufficient to keep the mixture molten;

(xi) introducing oxygen and carbon monoxide to the mixture to a desired pressure with the proviso that the solvent for the reaction mixture before introduction of oxygen consists of the aromatic hydroxy compound;

(xii) starting gas flow to the mixture at a desired concentration of oxygen and carbon monoxide;

(xiii) heating the mixture to a temperature in a range between that sufficient to keep the mixture molten and a desired ultimate temperature; and

(xiv) contacting the mixture with one or more mixtures comprising aromatic hydroxy compound and one or more catalyst components comprising the following and any reaction products thereof:

(A) at least one Group 8, 9, or 10 metal or a compound thereof;

(B) at least one tetrafluoroborate, hexafluorophosphate, tetraarylborate, arylsulfonate, sulfate, nitrate, carboxylate, acetate, benzoate, halide, chloride, or bromide salt with cation selected from the group consisting of guanidinium, ammonium, phosphonium, sulfonium, and alkali metal;

(C) at least one metal co-catalyst; and

(D) optionally, at least one activating solvent.

47. (Once amended) The method of claim 42 wherein the salt is at least one quaternary ammonium salt.

49. (Once amended) The method of claim 42 wherein the salt is at least one alkali metal salt and the mixture contains at least one activating solvent selected from

the group consisting of polyethers, nitriles, carboxylic acid amides, and sulfones.

56. (Once amended) A method for producing diphenyl carbonate from a mixture comprising phenol, which comprises the steps of :

(x) maintaining the mixture at a temperature at least sufficient to keep the mixture molten;

(xi) introducing oxygen and carbon monoxide to the mixture to a desired pressure with the proviso that the solvent for the reaction mixture before introduction of oxygen consists of the aromatic hydroxy compound;

(xii) starting gas flow to the mixture at a desired concentration of oxygen and carbon monoxide;

(xiii) heating the mixture to a temperature in a range between that sufficient to keep the mixture molten and a desired ultimate temperature; and

(xiv) contacting the mixture with one or more mixtures comprising phenol and one or more catalyst components comprising the following and any reaction products thereof:

(A) at least one palladium source;

(B) at least one tetrafluoroborate, hexafluorophosphate, tetraarylborate, arylsulfonate, sulfate, nitrate, carboxylate, acetate, benzoate, halide, chloride, or bromide salt with cation selected from the group consisting of guanidinium, ammonium, phosphonium, sulfonium, and alkali metal;

(C) at least one metal co-catalyst with metal selected from the group consisting of lead, cobalt, copper, titanium, manganese, cerium, and mixtures thereof; and

(D) optionally, at least one activating solvent.

REMARKS

Claims 1-3, 6-44 and 47-56 remain in the application.

Claim 6, 8, 47 and 49 have been amended to change their dependency. Claims 1, 33-39, 42 and 56 have been amended to place the claims in better form for consideration on appeal. Specifically, claims 1, 39 and 42 have been amended to recite that the salt is at least one tetrafluoroborate, hexafluorophosphate, tetraarylborate, arylsulfonate, sulfate,

nitrate, carboxylate, acetate, benzoate, halide, chloride, or bromide salt with cation selected from the group consisting of guanidinium, ammonium, phosphonium, sulfonium, and alkali metal. These amendments have antecedent basis in the specification, for example, on page 6, paragraph [0016].

In addition, claims 1, 33-39, 42 and 56 have been amended to include the proviso that the solvent for the reaction mixture before introduction of oxygen consists of the aromatic hydroxy compound. These amendments have antecedent basis in the specification, for example, on page 4, lines 1-2 of paragraph [0012], and in Examples 1-15.

The Applicants note for the record that these claim amendments have been made to clarify the subject matter of the invention, and not in response to any rejection over the prior art. No new matter has been added to the claims under 35 U.S.C. §132 in making the claim amendments.

35 U.S.C. § 103(a) Rejections

The Examiner has maintained the rejection of claims 1-56 under 35 U.S.C. § 103(a) as being unpatentable over **Buysch** et al. (US 5,856,554) and **Mizukami** et al. (US 5,380,907), or alternatively in view of Pressman et al. (US 5,760,272; hereinafter referred to as **Pressman '272**) and Pressman et al. (US 6,114,564; hereinafter referred to as **Pressman '564**). The Applicants courteously traverse these rejections with respect to the claims as amended for consideration on appeal.

The Examiner states the following (quote):

- "Applicants argue that the yields of the diaryl carbonate products of Buysch et al. are less than the yields of the instant claimed invention. In response, Applicants' argument has been considered but has not been found persuasive. Applicants have not demonstrated, in a side-by-side comparison, that the instant claimed process has unexpected, beneficial and superior results over the teachings of the cited prior art."

The Examiner further states the following (quote):

- "Applicants argue that the teachings of Buysch et al. are directed to a process for making diaryl carbonates which process requires the presence of at least 20 wt. % of diaryl carbonate in the reaction mixture at the start of the reaction. ... In response, Applicants' independent claim 1, for example, has "comprising", which is open-language. Therefore, having "at least 20 wt. % of diaryl carbonate in the reaction mixture at the start of the reaction" is embraced by the instant claims."

The Applicants respectfully submit that the instant claims as amended require that the solvent for the reaction mixture before introduction of oxygen consist of the aromatic hydroxy compound. In contrast, the teachings of **Buysch** require that the reaction mixture at the start of the reaction (i.e. in the presence of both carbon monoxide and oxygen) already have a content of diaryl carbonate of at least 20% by weight in a melt of diaryl carbonate and aromatic hydroxy compound (kindly see **Buysch**, column 2, lines 42-47 and column 3, lines 12-15). The Applicants note that the carbonylation reaction of aromatic hydroxy compound to form product diaryl carbonate cannot start until both carbon monoxide and oxygen are present.

The process conditions taught in **Buysch** are different from those claimed in the instant invention, because **Buysch** does not recognize or solve the problem which is recognized and solved in the instant invention. In particular, **Buysch** requires the presence of at least 20 wt. % diaryl carbonate at the start of reaction for reasons given in **Buysch**, column 2, lines 32-41 (quote):

- "The isolation from the reaction mixtures of the diaryl carbonate which is formed necessitates a considerable consumption of energy at low contents of diaryl carbonate, since large amounts of solvent or aromatic hydroxy compound have to be separated. There was therefore a need for a process which permits high diaryl carbonate contents in the reaction mixture to be

obtained within short times of reaction, so that the downstream isolation of the diaryl carbonate can be effected with minimal energy consumption."

In summary, the problem addressed by **Buysch** relates to an improved method for isolating product diaryl carbonate.

In contrast, the problem identified and solved by the Applicants in the instant application relates to an effective start-up procedure for a carbonylation reaction, which, among other advantages, avoids early inactivation of carbonylation catalyst system and results in high yields of aromatic carbonate over time (kindly see the instant application paragraph 47, lines 1-4). The start-up conditions under which a carbonylation catalyst system may become inactive or less active are not taught or suggested in **Buysch**, nor is any possible solution to catalyst inactivation during start-up taught or suggested. In contrast, the Applicants have unexpectedly discovered process conditions during start-up under which a carbonylation catalyst system may become inactive or less active (kindly see, for example, Comparative Examples C2-C5 and C10). Subsequently, the Applicants discovered process conditions, for example in Examples 1, 6-9 and 11-15, under which a carbonylation reaction may be started without early deactivation of catalyst such that high yields of aromatic carbonate are obtained over time. There is a succinct discussion of the contrast between the Examples and Comparative Examples, for example, in the instant specification in paragraphs [0072] through [0075] beginning on page 28.

The Applicants have already pointed out the fact that the wt. % values for diphenyl carbonate prepared under conditions of the instant invention's Examples are as good or better than wt. % values for diphenyl carbonate prepared under the distinctly different conditions of **Buysch** (kindly see the Applicants' Response dated September 27, 2002). A "side-by-side" comparison of the instant process with that of **Buysch** is not possible since (1) **Buysch's** process conditions are not the same as those of the instant invention, and (2) the process conditions of **Buysch** and those of the instant invention are designed to solve different problems.

The Applicants respectfully submit that there is no motivation based on the teachings of **Buysch** for anyone skilled in the art to perform a process to make diaryl

carbonate in the absence of diaryl carbonate present initially in the reaction mixture with the aim of preventing catalyst deactivation during a start-up procedure. Furthermore, there is no guidance in the teachings of **Buysch** for one skilled in the art to perform a process to make diaryl carbonate in the absence of diaryl carbonate present initially in the reaction mixture with the aim of preventing catalyst deactivation during a start-up procedure.

Turning now to **Mizukami**, the Examiner states the following (quote):

- "Applicants argue that there is no teaching or suggestion in Mizukami et al. of the use of a salt as a reaction component. In response, Mizukami et al. (column 3, lines 52-56; and column 4, lines 9-21) teach that the catalyst and the co-catalyst can be in the form of a salt (e.g. palladium chloride and manganese acetate). Therefore, Mizukami et al. teach a salt component."

The Applicants respectfully call the Examiner's attention to paragraph [0016] on page 6 of the instant specification wherein the definition of the "salt" component of the instant catalyst composition is provided. Said salt component is different from the "catalyst" or "co-catalyst" in **Mizukami** referred to by the Examiner and apparently corresponding in the Examiner's opinion to palladium chloride and manganese acetate, respectively. Palladium chloride and manganese acetate, when they are components of the catalyst composition of the instant invention, are defined in the genera of "Group 8, 9, or 10 metal or compound thereof" and "metal co-catalyst", respectively, as shown in the instant specification on page 5, paragraph [0013] and page 11, paragraph [0031], respectively. For clarity, the Applicants have amended claims 1, 39 and 42 to recite that the salt is at least one tetrafluoroborate, hexafluorophosphate, tetraarylborate, arylsulfonate, sulfate, nitrate, carboxylate, acetate, benzoate, halide, chloride, or bromide salt with cation selected from the group consisting of guanidinium, ammonium, phosphonium, sulfonium, and alkali metal, as defined in paragraph [0016] on page 6 of the instant specification.

Therefore, the Applicants respectfully assert that there is no teaching or suggestion in **Mizukami** of the use of a salt as a reaction component as defined in the instant application. More particularly, there is no teaching or suggestion in **Mizukami** of the use of at least one tetrafluoroborate, hexafluorophosphate, tetraarylborate, arylsulfonate, sulfate, nitrate, carboxylate, acetate, benzoate, halide, chloride, or bromide salt with cation selected from the group consisting of guanidinium, ammonium, phosphonium, sulfonium, and alkali metal. In contrast, the claims of the instant invention require the use of at least one such salt. The Applicants respectfully submit that there is no motivation based on the teachings of **Mizukami** for anyone skilled in the art to perform a process to make diaryl carbonate in the presence of such a salt as a required reaction component. Furthermore, there is no guidance in the teachings of **Mizukami** for one skilled in the art to perform a process to make diaryl carbonate in the presence of such a salt as a required reaction component.

Turning now to **Pressman '272** and **Pressman '564**, the Examiner states the following (quote):

- "Applicants argue that there is no teaching or suggestion in either Pressman et al. '272 or Pressman et al. '564 of carbon monoxide treatment of the reaction mixture before treatment with a carbon monoxide-oxygen mixture. In response, each of the Pressman et al. references teaches that the carbon monoxide and the oxygen may be introduced separately or as a mixture. See column 3, lines 35-38 in Pressman et al. '272; and column 4, lines 52-56 in Pressman et al. '564."

The Applicants respectfully disagree with the Examiner's position and submit that the Examiner has misinterpreted both **Pressman '272** and **Pressman '564**. In particular, **Pressman '272** in column 3, lines 35-38 states the following (quote): "Gas is supplied to the reaction mixture in proportions of about 2-50 mole percent oxygen, with the balance being carbon monoxide. The gases may be introduced separately or as a mixture...." Thus, the patent states that gas is supplied as a mixture of carbon monoxide and oxygen. There is no teaching or suggestion in **Pressman '272** that gas may be supplied comprising 0% oxygen. The phrase "The gases may be introduced separately or as a mixture..."

means that in various embodiments the gases may be introduced either simultaneously through two separate feed lines or simultaneously through one feedline comprising a "T-joint" coming from two separate gas reservoirs or simultaneously through one feedline as a premixture of gases from one reservoir. Furthermore, **Pressman '564** in column 4, lines 52-56 states the following (quote): "Gas is usually supplied in proportions of about 1-50 mole percent oxygen with the balance being carbon monoxide, and in any event outside the explosion range for safety reasons. The gases may be introduced separately or as a mixture." Thus, the patent states that gas is supplied as a mixture of carbon monoxide and oxygen. Again, there is no teaching or suggestion in **Pressman '564** that gas may be supplied comprising 0% oxygen. The phrase "The gases may be introduced separately or as a mixture..." means that in various embodiments the gases may be introduced either simultaneously through two separate feed lines or simultaneously through one feedline comprising a "T-joint" coming from two separate gas reservoirs or simultaneously through one feedline as a premixture of gases from one reservoir.

Therefore, the Applicants respectfully submit that there is no teaching or suggestion in either **Pressman '272** or **Pressman '564** of carbon monoxide treatment of the reaction mixture before treatment with a carbon monoxide-oxygen mixture. In contrast, specific claims of the instant invention require carbon monoxide treatment of the reaction mixture before treatment with a carbon monoxide-oxygen mixture. The Applicants respectfully submit that there is no motivation based on the teachings of either **Pressman '272** or **Pressman '564** for anyone skilled in the art to perform a process to make diaryl carbonate which involves treatment of a reaction mixture with carbon monoxide before treatment with a carbon monoxide-oxygen mixture. Furthermore, there is no guidance in the teachings of either **Pressman '272** or **Pressman '564** for one skilled in the art to perform a process to make diaryl carbonate which involves treatment of a reaction mixture with carbon monoxide before treatment with a carbon monoxide-oxygen mixture.

The Examiner further states the following (quote):

- "Applicants argue that the combination of the references do not teach a temperature range of between about 72°C and about 90°C. ... Buysch et al. teach the temperature... of Applicant's claimed invention (column 3, lines 8-12)."

The Applicants respectfully disagree with the Examiner's position and submit that the Examiner has misinterpreted the Applicants' argument. The Applicants' argument was directed to temperature ranges in instant claim 33 for heating a mixture at atmospheric pressure, then pressurizing under carbon monoxide alone. In contrast, the teachings of **Buysch** cited by the Examiner are as follows (quote):

- (**Buysch**, column 2, line 57 through column 3, line 10)
  "Accordingly, the present invention relates to a process for producing an organic carbonate of formula R--O--CO--O--R (I) wherein R represents a substituted or unsubstituted C.sub.6 -C.sub.12 aryl, preferably a substituted or unsubstituted phenyl, most preferably unsubstituted phenyl, by the reaction of an aromatic hydroxy compound of formula R--O--H (II) wherein R has the meaning given above, with carbon monoxide and oxygen in the presence of a platinum metal catalyst, a co-catalyst, a quaternary salt and a base at a temperature of 30 degree to 200 degree C, preferably 30 degree to 150 degree C, most preferably 40 degree to 120 degree C, and at a pressure of 1 to 200 bar, preferably 2 to 150 bar, most preferably 5 to 75 bar...."

Thus, the temperature ranges given in **Buysch** relate to the temperature ranges for reaction of an aromatic hydroxy compound with carbon monoxide and oxygen. The temperature ranges given in **Buysch** cited by the Examiner do not relate to temperature ranges for heating a mixture at atmospheric pressure, then pressurizing under carbon monoxide alone, in the absence of oxygen. The Applicants note that there is no teaching or suggestion in either **Buysch** or in **Mizukami**, **Pressman '272** or **Pressman '564** or in any combination thereof wherein a reaction mixture is heated at atmospheric pressure to a temperature in a range of between about 72°C and about 90°C; then pressurized with carbon monoxide as required in steps (ii) and (iii) of claim 33 of the instant application. More particularly, in **Buysch** in Examples where there is a treatment with carbon

monoxide before treatment with carbon monoxide-oxygen mixture, the reaction mixture is heated to 60°C (kindly see **Buysch**, Examples 1-4). In **Mizukami**, in Examples where there is a treatment with carbon monoxide before treatment with carbon monoxide-oxygen mixture, the reaction mixture is treated at room temperature (kindly see **Mizukami**, Examples 1-18). In Examples in **Pressman '272** and **Pressman '564** there is no treatment with carbon monoxide before treatment with carbon monoxide-oxygen mixture.

The Examiner draws the following conclusions regarding the cited references (quote) :

- "The difference of the combined references is that the Buysch et al reference teaches that the diphenyl carbonate (DPC) is present in the initial melt with the hydroxy compound. However, since this is the only variation of the instant application from the bulk of the prior art, all other parameters being equal to that known in the art, it would have been obvious to combine the known art, and making slight variations in order to provide an optimized process. Therefore, one skilled in the art would have been motivated to combine the prior art references to arrive at the instant claimed process since the various catalyst compositions are well known in the art for the production of diaryl carbonates, and to provide an optimized process. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the references and modify the prior art, given the state of the art at the time the invention was made, in order to optimize the process absent a showing of unexpected results. Therefore, the instant claimed invention would have been suggested to one skilled in the art."

Considering the combination of **Buysch** and **Mizukami**, or alternatively one of **Pressman '272** and **Pressman '564**, the Applicants respectfully submit that combining **Buysch** with **Mizukami**, or alternatively one of **Pressman '272** and **Pressman '564**, does not give the Applicants' invention. To begin with, there is no teaching or suggestion in either **Buysch** or in **Mizukami**, **Pressman '272** or **Pressman '564** or in any combination thereof directed to particular start-up conditions under which a carbonylation catalyst

system may become inactive or less active, nor is any possible solution to catalyst inactivation during start-up taught or suggested therein. In contrast, the Applicants have unexpectedly discovered process conditions during start-up under which a carbonylation catalyst system may become inactive or less active, and have subsequently discovered process conditions under which a carbonylation reaction may be started without early deactivation of catalyst such that high yields of aromatic carbonate may be obtained over time. More particularly, the teachings of **Buysch** relate to an improved method for isolating product diaryl carbonate. **Buysch** requires the presence of diaryl carbonate product in the reaction mixture before commencement of reaction of a phenol with carbon monoxide and oxygen in order to facilitate isolation of product diaryl carbonate. In contrast, in the present invention the solvent for the reaction mixture before introduction of oxygen (i.e. before reaction) consists of the aromatic hydroxy compound.

The Applicants further note that there is no teaching or suggestion in **Buysch**, **Mizukami**, **Pressman '272** or **Pressman '564** or in any combination thereof wherein a reaction mixture is heated at atmospheric pressure to a temperature in a range of between about 72°C and about 90°C; then pressurized with carbon monoxide as required in steps (ii) and (iii) of claim 33 of the instant application. More particularly, in **Buysch** in Examples where there is a treatment with carbon monoxide before treatment with carbon monoxide-oxygen mixture, the reaction mixture is heated to 60°C (kindly see **Buysch**, Examples 1-4). In Examples in **Mizukami**, the reaction mixture is treated at room temperature (kindly see **Mizukami**, Examples 1-18). In Examples in **Pressman '272** and **Pressman '564** there is no treatment with carbon monoxide before treatment with carbon monoxide-oxygen mixture.

The Applicants further note that there is no teaching or suggestion in **Buysch**, **Mizukami**, **Pressman '272** or **Pressman '564** or in any combination thereof wherein a reaction mixture is pressurized with carbon monoxide; then heated under pressure of carbon monoxide to a desired ultimate temperature before treatment with carbon monoxide-oxygen mixture as required in steps (iii) and (iv) of claim 34 of the instant application. More particularly, in **Buysch** in Examples where there is a treatment with

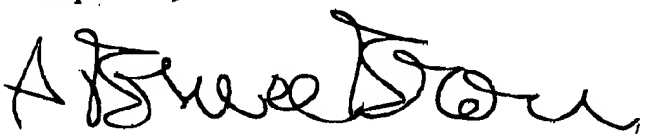
carbon monoxide before treatment with carbon monoxide-oxygen mixture, the reaction mixture is treated at 60°C with carbon monoxide, then heated to 80-90°C with treatment with carbon monoxide-oxygen mixture (kindly see **Buysch**, Examples 1-4). In Examples in **Mizukami**, the reaction mixture is treated at room temperature with carbon monoxide, then heated to 100°C with treatment with carbon monoxide-oxygen mixture (kindly see **Mizukami**, Examples 1-18). In Examples in **Pressman '272** and **Pressman '564** there is no treatment with carbon monoxide before treatment with carbon monoxide-oxygen mixture.

In view of these remarks, it is respectfully requested that the rejection of claims 1-56 under 35 U.S.C. 103(a) as being unpatentable over **Buysch** and **Mizukami**, or alternatively one of **Pressman '272** and **Pressman '564** be withdrawn.

In view of the foregoing, the Applicants respectfully submit that the application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are respectfully requested.

Should the Examiner believe that anything further is needed to place the application in even better condition for allowance, the Examiner is requested to contact the Applicants' undersigned representative at the telephone number below.

Respectfully submitted,



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February 18, 2003
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